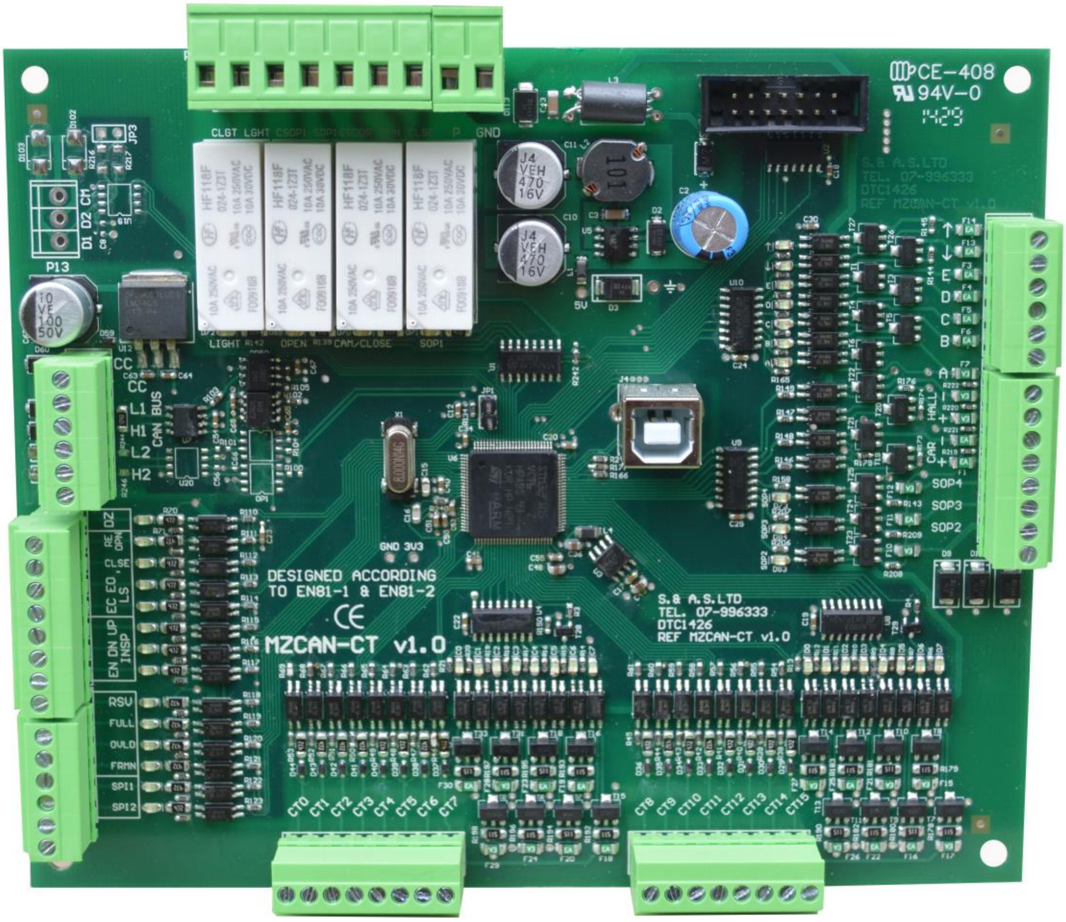
S. & A.S. LTD

CABIN CONTROL BOARD
VERSION 1.0
REF. CARTOP V1.0



USER'S MANUAL

FOR S/W VERSION 1.01

1544

S. & A. S. LTD

Beirut Office:
Boutros Building 1st Basement
Cheikh-el-Ghabi Street
Ghabi Beirut 2068 7808
Lebanon
Tel: +961 1 216 994
Fax:+961 1 339 600

Headquarters & Factory:
S. & A. S. Building
Seaside Road
Jieh Chouf
Lebanon
Tel: +961 7 996 333
Fax:+961 7 996 116

Website:
www.sascontrollers.com

Technical Support & Email:
Tel: +961 71 996 333
support@sascontrollers.com

1 GENERAL DESCRIPTION

The **CarTop** is used with the new CAN communication interface available in the Microzed V3.5 boards. The main aim of this interface is to simplify the elevator installation procedure and reduce the number of wires needed. Using the **CarTop**, the Microzed V3.5 board receives information from the cabin and sends control signals back. Installed on the cabin, the **CarTop** is used to register carcalls, process the control signals sent by the main Microzed board, read different car information (calls,door status…) and send them back to the main Microzed board.

2 MAIN FEATURES

Platform	ARM Microcontroller
Communication	CAN Open communication interface via CAN bus
Firmware update	User desktop interface to upgrade firmware on site Google store Application: SASPTool

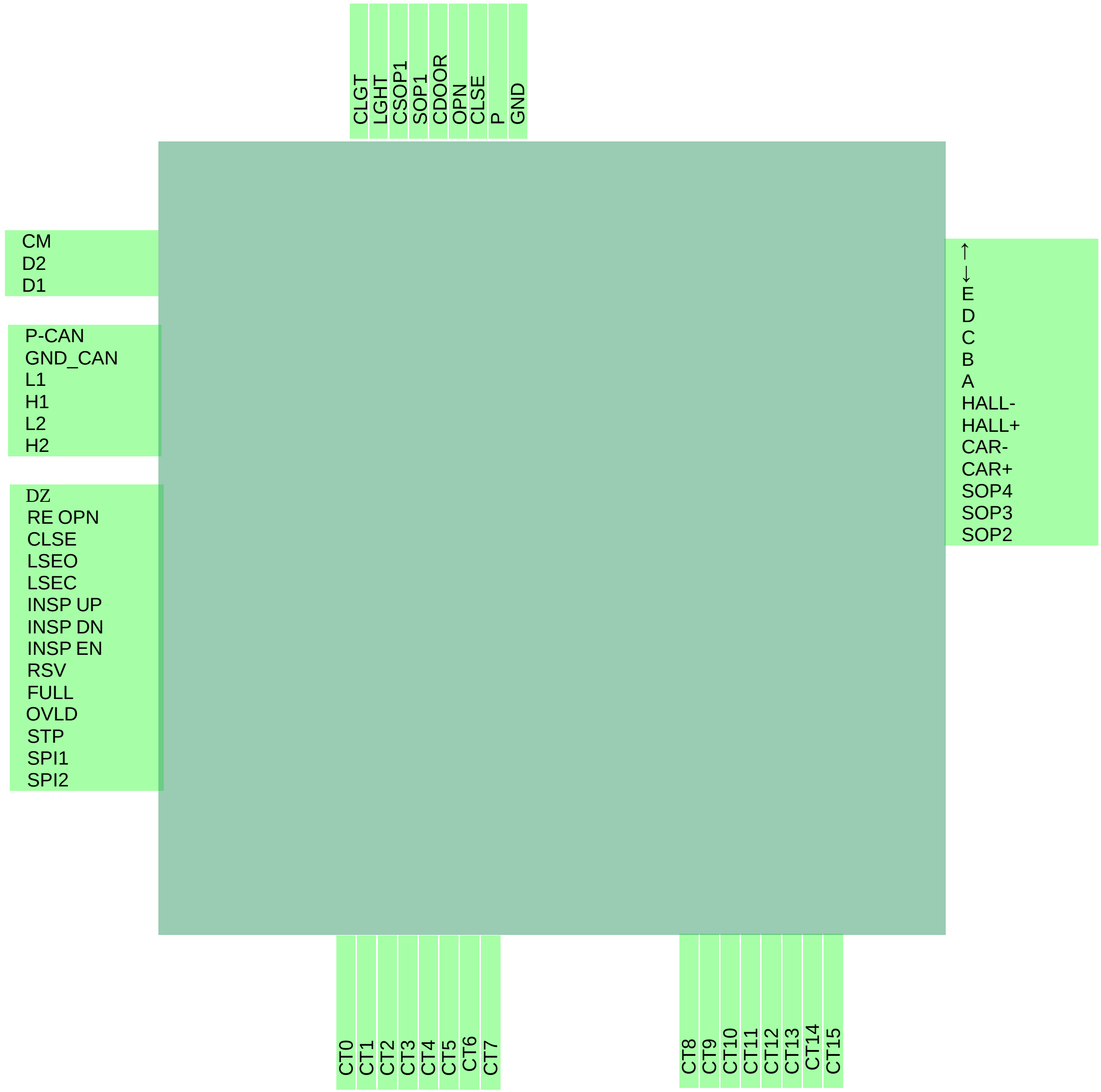
3 TECHNICAL DATA

Supply voltages	Board supply: 24vdc +15% -25% - 120mA Periphery supply: 22vdc +15% -25%
Inputs	Each input has a led to indicate its status – all inputs are optically isolated Input active voltage level is 22vdc
Control outputs	Each output has a led to indicate its status – all outputs are dry relay contacts Rated at 250Vac 10A[1]
Spare outputs	Each output has a led to indicate its status – all outputs are optically isolated Output voltage level is 0vdc (GND) when active
Call terminals	Each call has a led to indicate its status Each call terminal consists of a combined input/output which is optically isolated Call active voltage level is zero volts (GND) Call terminals are capable of driving lamps up to 3 watts operating on 22vdc Each call terminal is protected by an additional output transistor
Indicator outputs	Each output has a led to indicate its status – all outputs are optically isolated For A,B,C,D,E, LED On: Output voltage level is 22vdc (P) For arrow up and arrow down LED On: Output voltage level is 22vdc (P)
Connection	Screw type, plug-in connectors

[1] Care should be taken to add a freewheeling diode in parallel with the coil of each DC contactor or DC relay driven from the board.

4 TERMINAL DESCRIPTION

4.1 TERMINAL LAYOUT



4.2 CARTOP TERMINALS

P	Supply – positive side 22Vdc
GND	Supply – negative side

4.3 INPUT TERMINALS

DZ[1]	Door zone magnetic switch
RE OPN	Re-open for automatic door (when inactive) / door closed for swinging door (when active)
CLSE	Bypasses reclosing delay in automatic door
LS EO	Limit switch end of opening
LS EC	Limit switch end of closing
INSP UP[2]	Not used
INSP DN[2]	Not used
INSP EN[2]	Not used
RSV	Reservation – outside calls are canceled (when input is active)
FULL	Full load – only car calls are served with outside calls still being registered (when input is active)
OVLD	Overload
FRMN	Not used
SPI1	Spare Input1
SPI2	Spare Input2

In case RE OPN input is configured as normally closed, both RE OPN inputs on CartTop control and on Microzed main control should be active to deactivate re-open. Otherwise (i.e. RE OPN is configured as normally open), re-open is considered active when one of its corresponding inputs on the Microzed main control or the CartTop control is active.

All the other inputs are considered active when one of their corresponding inputs on the Microzed main control or the CartTop control is active.

[1] This terminal must be connected to DZ of Microzed in main control panel as well.
[2] This terminal is not used, since INSP EN, INSP UP and INSP DN INPUTS are connected to Microzed main control panel.

4.4 OUTPUT TERMINALS

4.4.1 OUTPUT TERMINALS

CLSE	Cam contactor[1] / Close relay or contactor[2]
OPN	Open door relay or contactor[2]
CDOOR	Common for CLSE and OPN outputs
SOP1	Spare output 1
CSOP1	Common for Spare output 1
LGHT	Car light relay
CLGT	Common for LGHT output

4.4.2 INDICATOR OUTPUT TERMINALS

↑	Up direction arrow
↓	Down direction arrow
A	Floor information A for Gray code indicator
B	Floor information B for Gray code indicator
C	Floor information C for Gray code indicator
D	Floor information D for Gray code indicator
E	Floor information E for Gray code indicator

4.5 CALL TERMINALS

CT15	Car 15
CT14	Car 14
CT13	Car 13
CT12	Car 12
CT11	Car 11
CT10	Car 10
CT9	Car 9
CT8	Car 8
CT7	Car 7
CT6	Car 6
CT5	Car 5
CT4	Car 4
CT3	Car 3
CT2	Car 2
CT1	Car 1
CT0	Car 0

4.6 COMMUNICATION TERMINALS CONNECTION

P-CAN	CAN Supply – positive side 24Vdc (Taken from separate supply installed in Microzed panel)
GND_CAN	CAN Supply – negative side
L1	CAN Low
H1	CAN High
L2	Not used
H2	Not used

[1] For swinging door.
[2] For automatic door only.

5 DESKTOP FIRMWARE UPGRADE

5.1 INSTALLING THE CARTOP FIRMWARE UPGRADE SOFTWARE

In order to upgrade firmware on site, a CD will be provided by S.&A.S.Ltd & the below steps shall be followed:

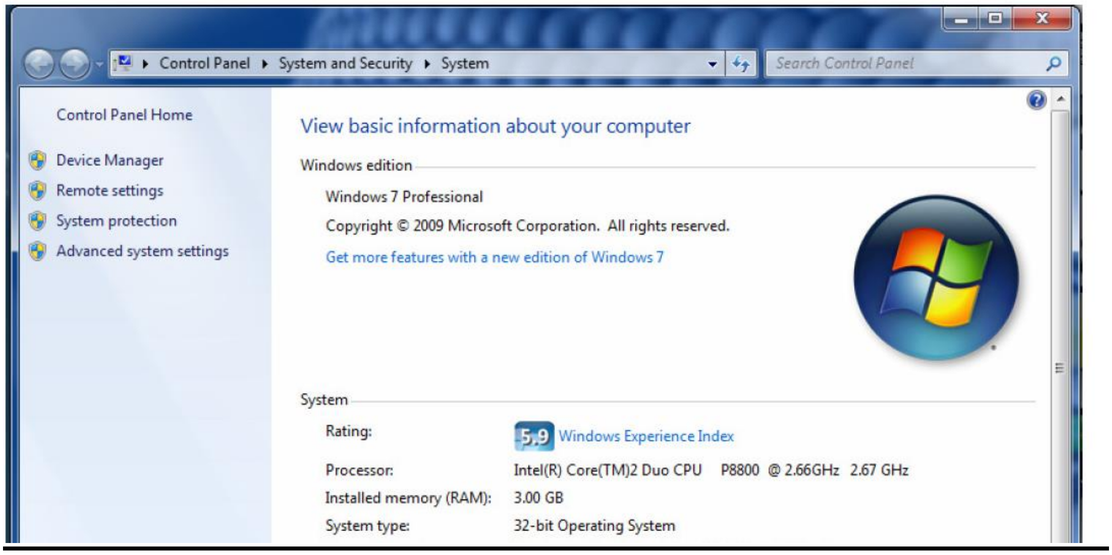
1. Run file “SAS_Patch.exe” located in “CarTop_PTool\SAS_PTool” folder.
2. Go to the folder “SAS_PTool_Setup” located in “MZ350_PTool\SAS_PTool” folder and double click on “setup.exe”, then follow the instructions to setup the software “SAS_PTool.exe”.
3. “SAS_PTool” will appear in the programs list. Send it to Desktop as shortcut.

5.2 INSTALLING THE CARTOP USB DRIVER

1. Power off the CarTop board.
2. Make sure that USB cable is connected to PC. Plug in the USB cable and Power on the CarTop.
3. Follow the steps below to setup the driver according to the version of windows on PC.

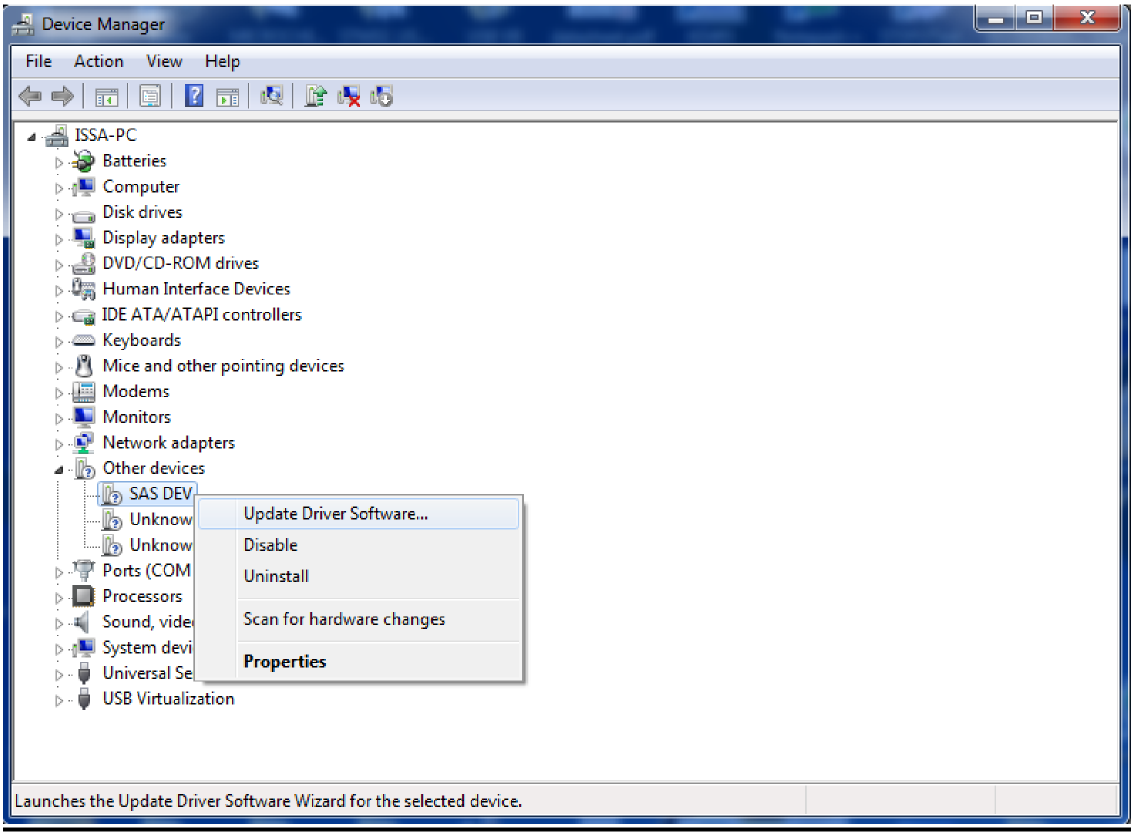
5.2.1 DRIVER SETUP FOR WINDOWS VISTA/WIN7[1]

The first CarTop plugged into the PC USB port may not launch an automatic start. In this case, right-click my computer and choose properties. The following window appears. On the left side of the window, click on Device Manager.

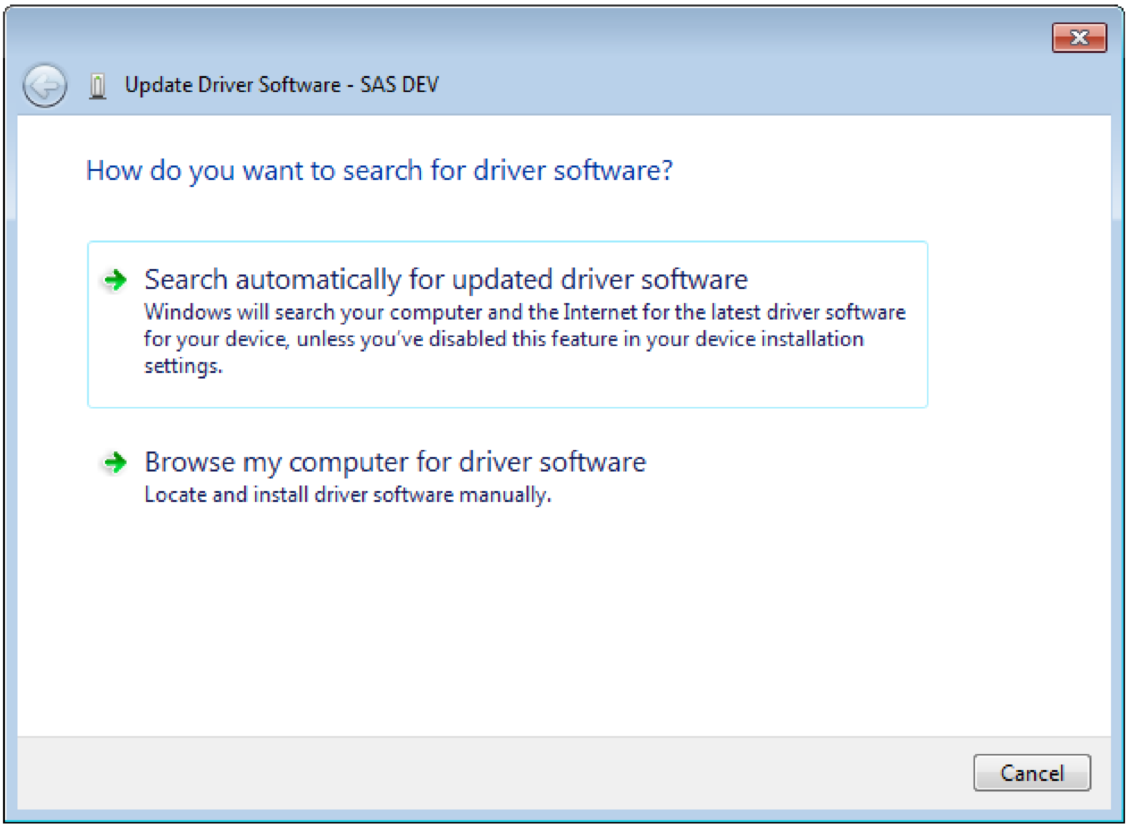


[1] This will be implemented only one time when the first CarTop is connected to PC through USB.

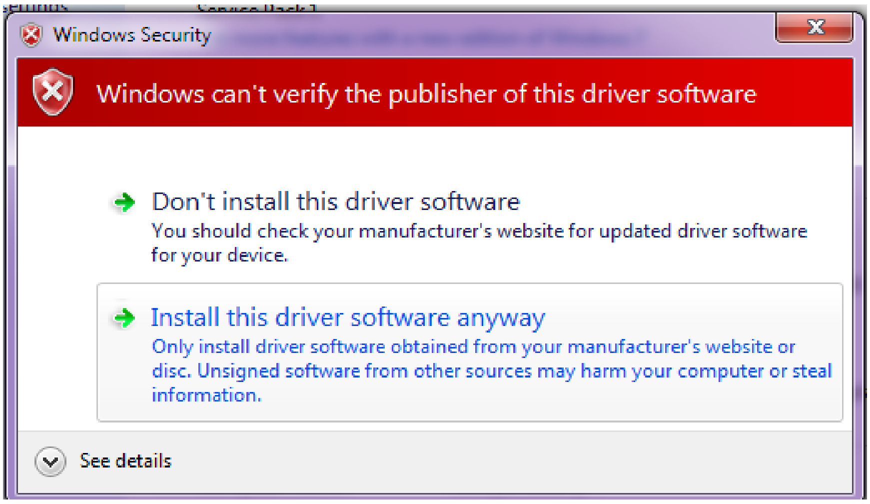
The CarTop device will appear in Other Devices, right-click it and choose Update Driver Software.



Select "Search automatically for updates driver software".



Select “Install this driver software anyway”.



The Driver SETUP procedure will be done only once For Windows vista/Win7.
So, the driver of any new CarTop connected to the PC USB port will be installed automatically.

5.2.2 DRIVER SETUP FOR WINDOWS XP

Each time a new CarTop is plugged into the PC USB port, a “Found New Hardware Wizard” window appears.
Select “Install the software automatically (Recommended)” and click next.



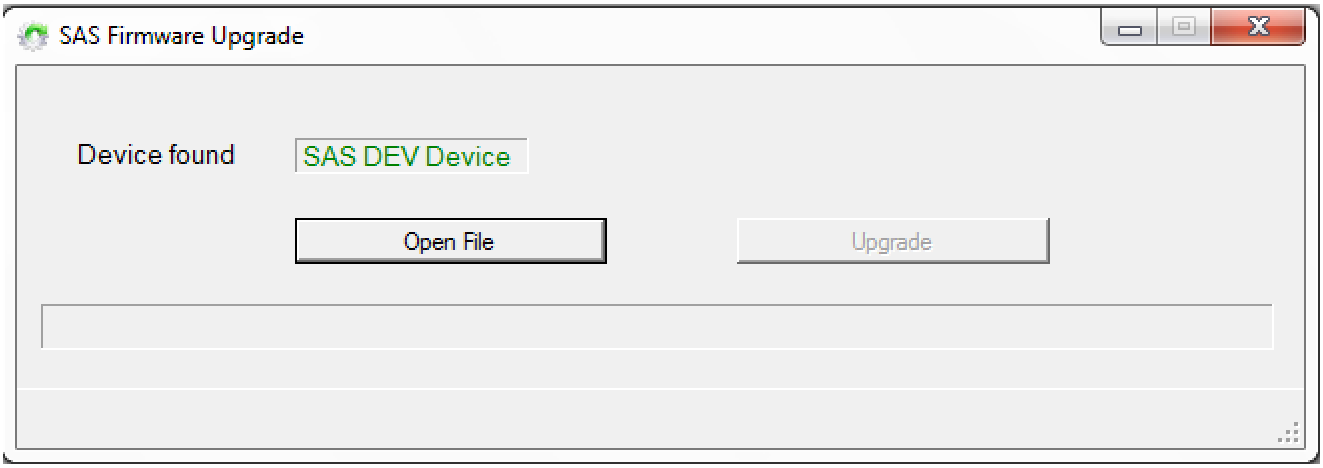
Select “Continue Anyway”.



The driver of the new CarTop connected to the PC USB port will be installed automatically.

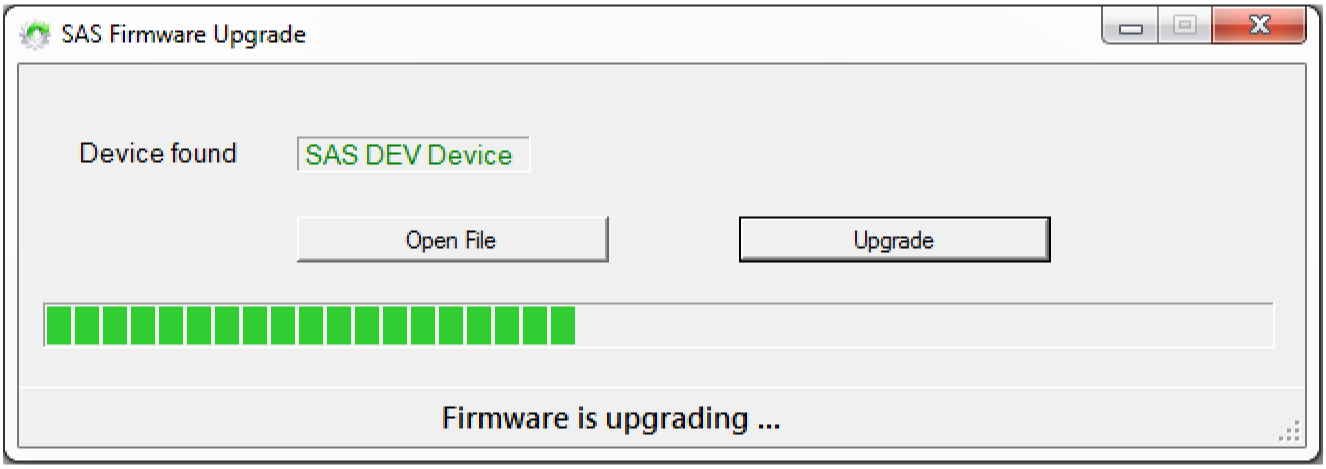
5.3 FIRMWARE UPGRADE PROCESS

Power off the CarTop board.
Make sure that USB cable is connected to PC. Plug in the USB cable and Power on the CarTop.
Run “SAS_PTool” application.
The following window will appear prompting the user that the CarTop board is detected on the USB port:

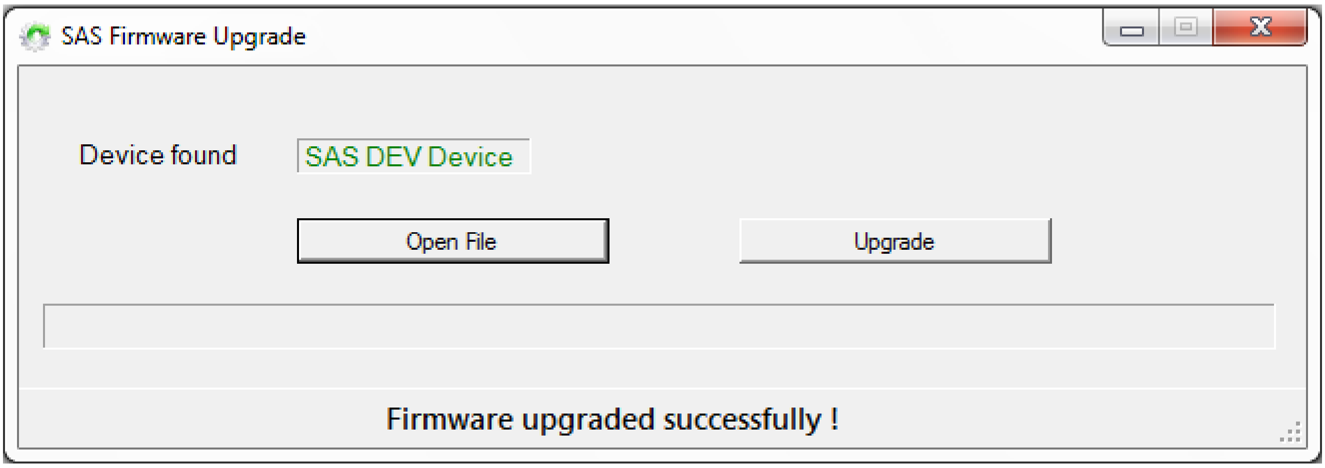


Click Open to choose the *.sas file that will be used to upgrade the firmware.
A Footnote will appear showing the file name, the software version and its date:

Click upgrade. The upgrade progress is shown as below:



Once the upgrade is complete, the footnote “Firmware upgraded successfully” will appear:



Disconnect the USB cable from CarTop
The user can now process with normal operation of the lift.

6 GOOGLE STORE FIRMWARE UPGRADE

6.1 INSTALLING THE SASPTOOL FIRMWARE APPLICATION ON THE MOBILE

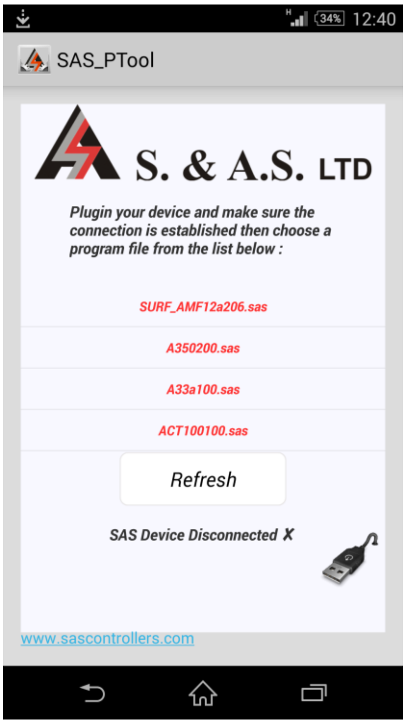


In order to upgrade firmware from a mobile, follow the below steps:

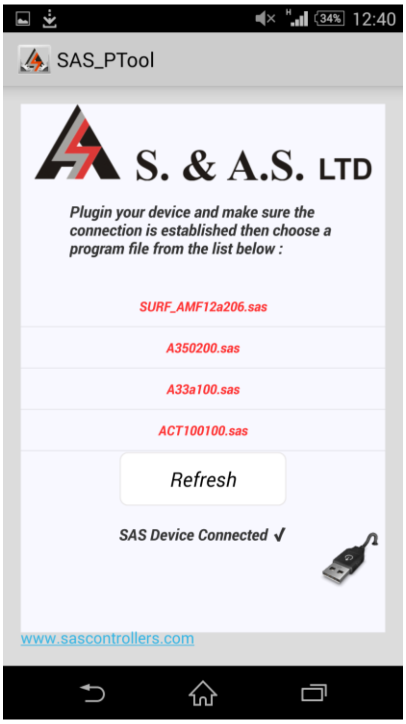
1. Search for the application “SASPTool” on google store and install it, or follow the link below: https://play.google.com/store/search?q=SASPTool.

6.2 FIRMWARE UPGRADE PROCESS

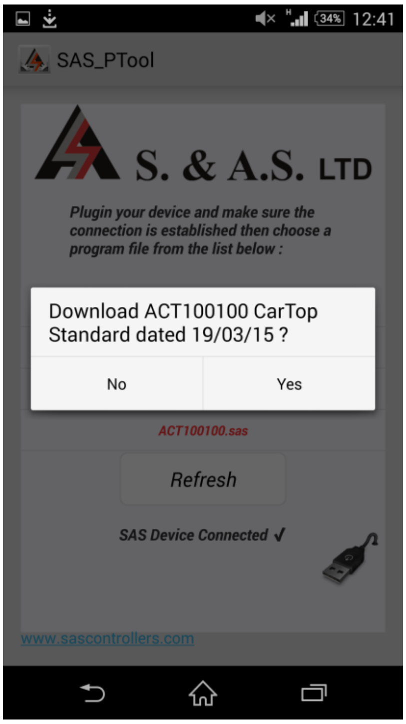
Run “SAS_PTool” application from the mobile.
The below window appears showing all *.sas files already saved.



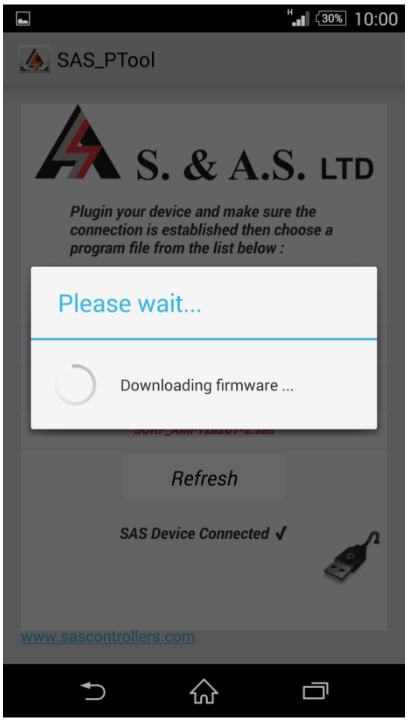
Power off the CarTop board.
Use a USB cable to connect board to the mobile.
Turn CarTop on.



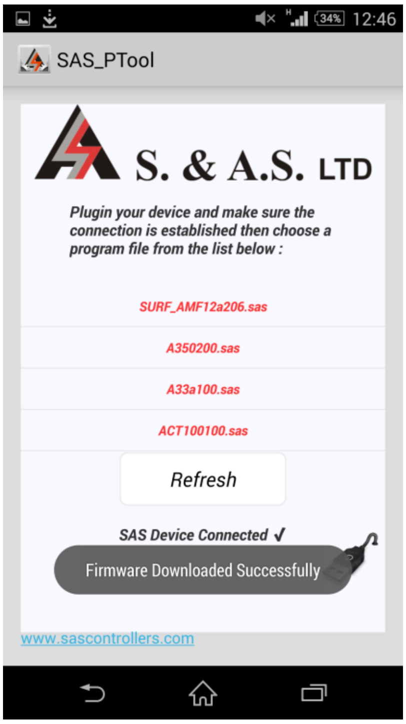
Click on the sas file that you need to download.
A Popup window will appear showing the file name, its description and its date:



Click Yes. The downloading starts:

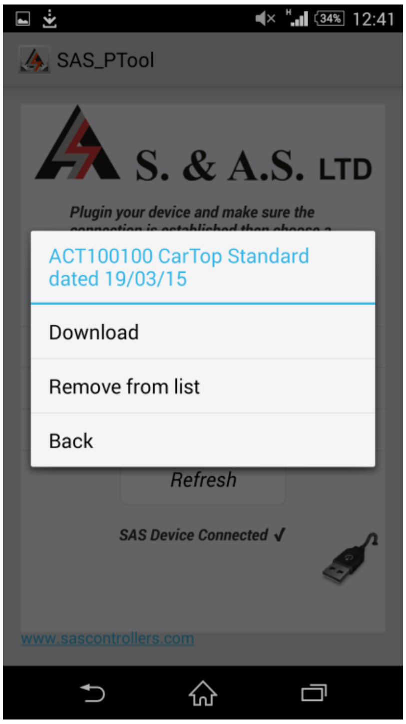


Once the downloading is complete, the message "Firmware Downloaded successfully" will appear:



Disconnect the USB cable.
The user can now process with normal operation of the lift.

If you desire to delete any sas file from the mobile list, press on the filename until a Popup window appears showing you multiple choices:



7 APPENDIX A

This appendix contains all wiring diagrams relevant to assembling the board in a panel.